

*Statewide Implementation of
Electronic Health Records*

**EHRs in Massachusetts:
Who has them and how are
they using them?**

*Supported by the
Agency for Healthcare Research and Quality*

Outline

Background: Massachusetts e-Health
Collaborative

Two statewide surveys

Office practice managers

Physicians in office practices

Massachusetts e-Health Collaborative (MAeHC)

Formed in 2004

Major health care stakeholders

\$50 million from Blue Cross Blue Shield of MA

Statewide EHR adoption

Demonstration project:

- Universal EHR adoption in 3 communities
- Intra-community and inter-community data exchange

EHR Adoption in U.S., 2003

Most physicians do not currently use EHRs

- National average 17.6% of physicians using EHRs

Large groups more likely to use EHRs than small groups

HMO-owned practices are three times more likely than physician-owned practices to use an EHR

* Burt and Sisk. *Health Affairs*. Sep/Oct 2005.

What is Current State of EHR Adoption in Massachusetts?

Two statewide surveys, summer 2005

Office practice managers

Physicians in office practices

Office Practice Survey

Stratified sample of 1829 practices

- (30% of state)

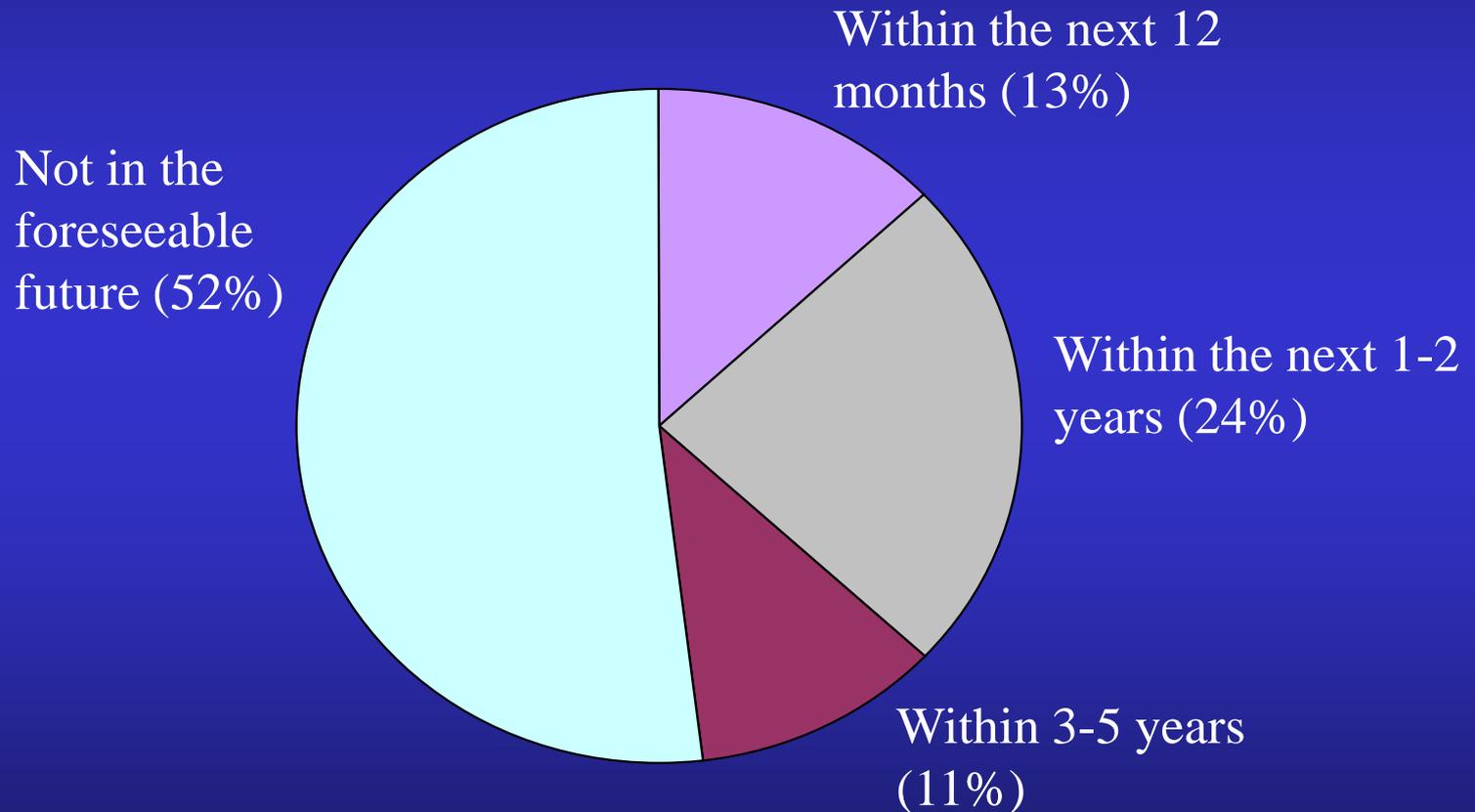
All specialties, urban/rural, large and small practices

1-page mailed survey sent to the attention of *office practice managers*

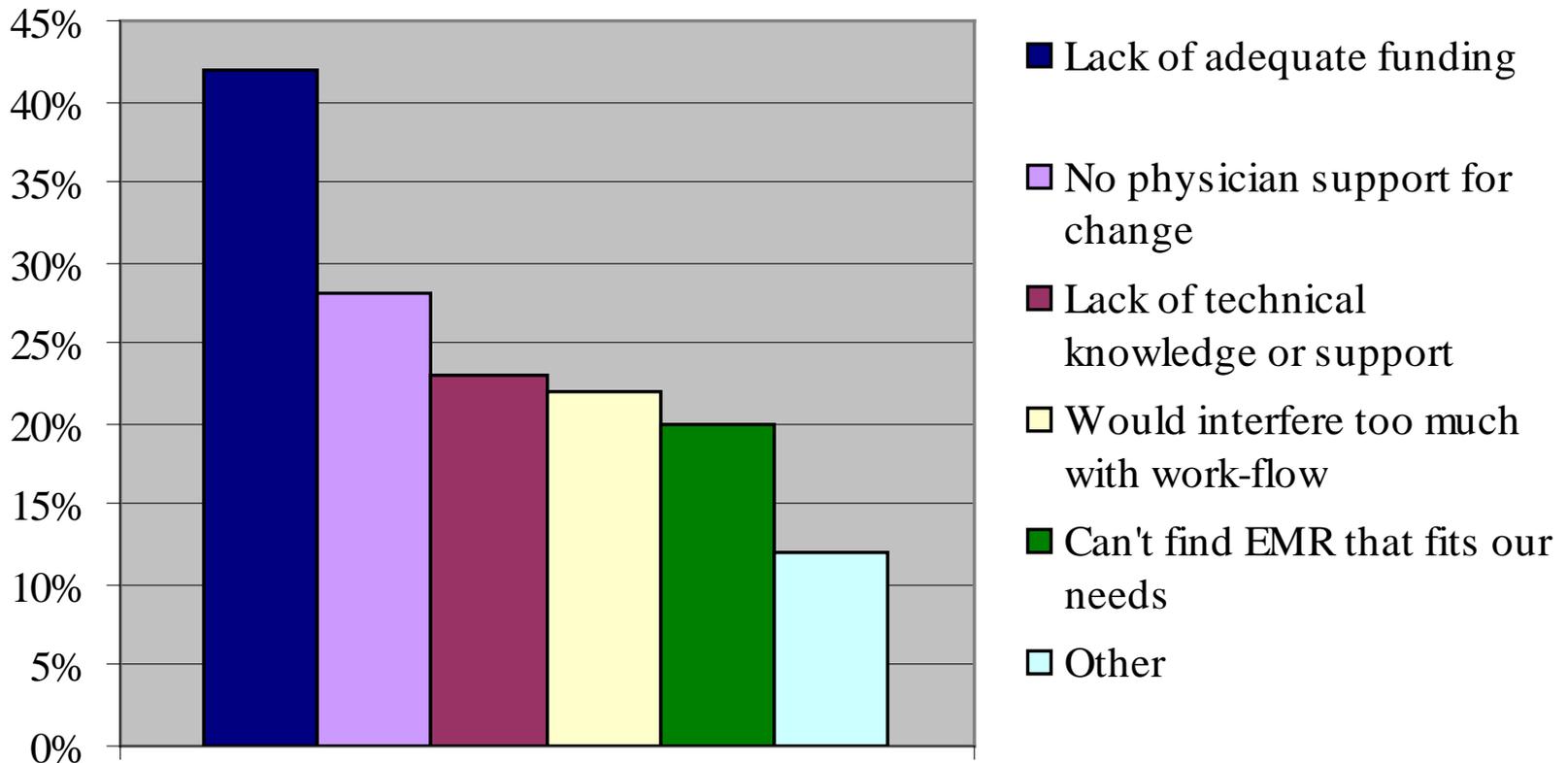
46% response rate

Practice Characteristic	% of Office Practices Using EHRs Within Each Characteristic
Overall (100 %)	18%
Specialty	
Primary care only (27%)	23%
Specialty care only (61%)	14%
Mixed (12%)	25%
Number of physicians	
1 (48%)	9%
2-3 (26%)	14%
4-6 (11%)	32%
7+ (15%)	44%
Hospital-based (22%)	34%
Non-hospital-based (78%)	12%
Urban (93%)	18%
Non-urban (7%)	15%

Implementation – Future Plans



Barriers to Implementation*



Physician Survey

Same sample of practices as office manager survey

Included only physicians with ambulatory clinical practices

8-page mail survey

\$20 incentive

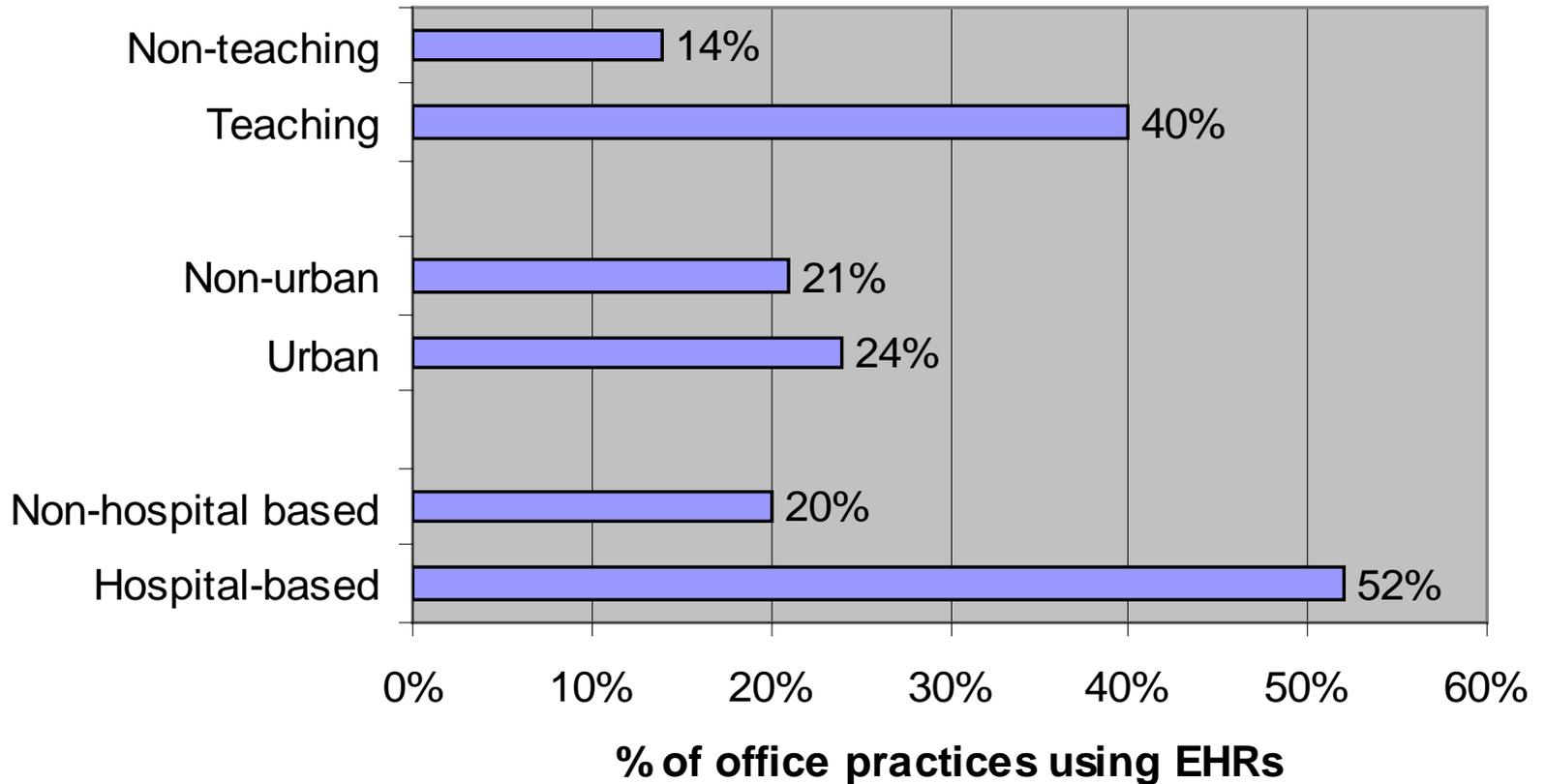
Overall Response Rate: 71%

	Respondents	Non-Respondents	P
Primary Care	36%	37%	0.64
Solo Practice	44%	47%	0.24
Hospital-Based	27%	28%	0.63
Non-Urban	3%	5%	0.10

EHR Adoption

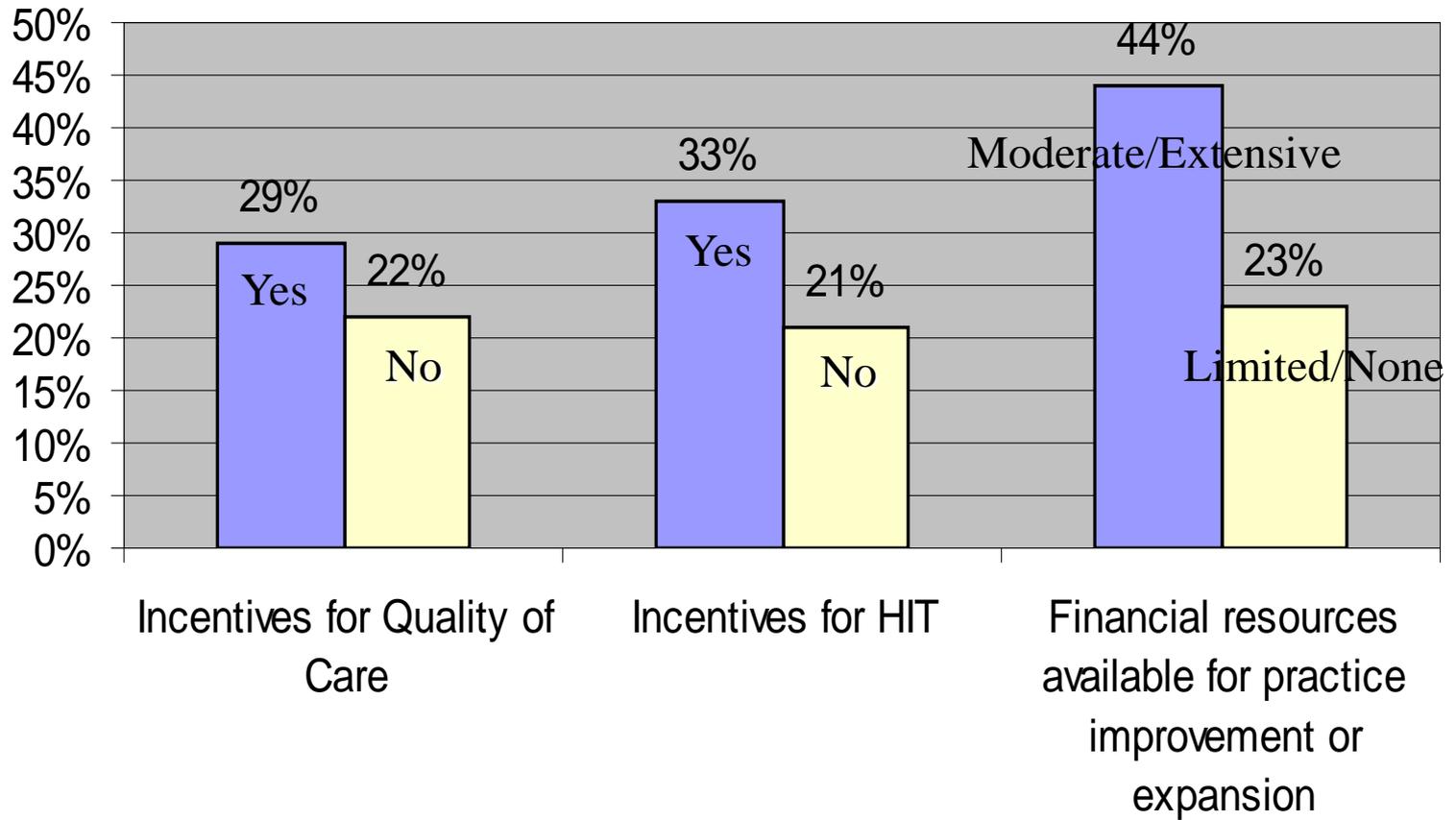
	Percent of Office Practices Using EHRs
Overall	23%
Specialty	
Primary Care	25%
Single Specialty	20%
Multi-Specialty	23%
Number of physicians	
1	14%
2-3	15%
4-6	33%
7+	52%

EHR Adoption



Incentives

Percent with EHR



Additional Adoption Statistics

On a physician level, a total of 45 percent of physicians in Massachusetts had EHRs.

Among practices with EHRs, more than half (53 percent) reported having EHRs in their practice for more than 3 years.

Practice characteristics as correlates of EHR Adoption

Practice Characteristics	Adjusted Odds Ratio	95% CI
Specialty		
Single-specialty or multi-specialty	1	--
Primary care	1.28	0.87-1.87
Number of physicians		
1 physician	1	--
2-3 physicians	0.81	0.50 – 1.31
4-6 physicians	1.68	1.01 – 2.77
7 or more physicians	3.66	2.28 – 5.88
Hospital-based	2.43	1.51 – 3.85
Non-rural	1.17	0.16 – 8.83
Teaching	2.25	1.57 – 3.24
Incentives for quality of care	0.94	0.61 – 1.47
Incentives for health information technology	1.49	0.98 – 2.29
Moderate to extensive financial resources available for practice expansion and improvement	1.34	0.92 – 1.96
Practice has innovative office staff	0.76	0.52 – 1.11
Practice has innovative physician(s)	1.49	1.00 – 2.22

Office computing capabilities as correlates of EHR adoption in ambulatory care

	Overall (%)	EHR Adopters (%)	EHR Non-Adopters (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Office has email	66%	86%	60%	4.08	2.82 – 5.90	2.62	1.77 – 3.89
Office has computerized scheduling system	62%	87%	54%	5.73	3.93 – 8.36	3.72	2.44 – 5.68
Office has e-prescribing	21%	50%	12%	7.65	5.60 – 10.45	5.96	4.21 – 8.43
Office has broad-band	67%	79%	63%	2.14	1.55 – 2.94	1.41	0.98 – 2.02

Perceived barriers to adoption or expansion of HIT as correlates of EHR adoption in ambulatory care

	Overall (%)	EHR Adopters (%)	EHR Non-Adopters (%)	Crude Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Lack of time to acquire knowledge about systems	77%	69%	80%	0.55	0.40 – 0.74	0.66	0.56 – 0.93
Physician skepticism	57%	49%	60%	0.64	0.49 – 0.84	0.53	0.39 – 0.73
Lack of computer skills	59%	57%	60%	0.9	0.69 – 1.19	1.04	0.76 – 1.41
Lack of technical support	66%	59%	68%	0.68	0.51 – 0.89	0.78	0.57 – 1.07
Lack of uniform standards	78%	68%	81%	0.49	0.36 – 0.66	0.57	0.40 – 0.80
Technical limitations of systems	79%	78%	79%	0.99	0.71 – 1.37	1.02	0.70 – 1.49
Start-up financial costs	84%	64%	90%	0.19	0.14 – 0.27	0.26	0.18 – 0.38
Ongoing financial costs	82%	63%	88%	0.24	0.17 – 0.32	0.35	0.24 – 0.50
Loss of productivity	81%	65%	86%	0.31	0.22 – 0.42	0.41	0.29 – 0.59
Privacy or security concerns	55%	47%	58%	0.65	0.49 – 0.85	0.83	0.61 – 1.13

Organizations influencing practices in the decision whether to adopt a new EHR system

	EHR Adopters (N=333)	EHR Non-Adopters (N=708)	
Organization	Percent*	Percent*	P Value
Your practice group	69	56	<0.001
Physician Hospital Organization(s) (PHOs) or Independent Practice Association(s) (IPAs)	40	43	0.45
Integrated Delivery System(s) (IDS)	29	33	0.27
Managed care plans you work with	30	41	<0.001
Massachusetts Medical Society	18	34	<0.001
Your specialty's professional society	21	30	0.003
MassPRO or DOQ-IT	8	22	<0.001
Massachusetts e-Health Collaborative	9	23	<0.001
The LeapFrog Group	6	16	<0.001

Limitations

Massachusetts only

New measure of EHR usage (may not be comparable to other studies)

Cross-sectional: difficult to draw causal inference

Conclusions

- Fewer than one in four office practices in MA have EHRs
- Nearly 50% of physicians in MA have EHR in their practice
- Larger practices and hospital-based practices were more highly correlated with EHR adoption

Conclusions (2)

- For practices without EHRs, >80% report finances as major barrier
- Both financial and non-financial (e.g., cultural) barriers persist
- EHR decision-making is local →
Implications for interventions